

Commodore International

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Company News The Commodore Success Story and Germany

From Desktop Calculator to Multimedia Magic

It's a line-up everybody in Germany knows: "Profi-Line" PCs, Amiga 500 through Amiga 3000, C64, CDTV – big names which helped Commodore attract the attention of the computer world last year as the company celebrated its 20th year in Germany.

A lot has changed in 20 years. Remember PET 2001 and VC 20? This was the lineup in the 1970's, the machines which helped launch Commodore internationally. Today, they are almost forgotten. So, too, is the fact that the company actually got its start in 1958 in Toronto, Canada, repairing and servicing office equipment. In those days, electronic information technology was in its infancy. The PC was just a gleam in Commodore's eye.

The company as we know it today got started in 1960 with the establishment of Commodore Business Machines Inc. in the U.S.A. At that time, the company adopted a new thrust. This was the dawn of a new era; the changeover from manual to electronic data handling in the U.S. business community was just getting started. Calculators and large, main-frame computers replaced manual business equipment. Demand mushroomed, not only from large-scale information handlers like banks but also from mid-sized companies. There was constant demand for faster, more powerful equipment.



Commodore Germany
Frankfurt



Commodore
Braunschweig
Factory

The big breakthrough came in 1967: Commodore introduced the first electronic desktop calculator. The effect on banking, on inventory control, on financial markets was dramatic. To speed development of even more sophisticated products, Commodore opened the first development laboratory in what would become the renowned Silicon Valley of Northern California.

CONTENTS

Company News	1
European News	4
Canadian News	6
Amiga News	8
Editorial	9
CDTV News	11
Market News	14
Financial News	16



Company News

The PC Debut

That's how California became the cradle of the first Personal Computer Commodore unveiled at the National Computer Conference in Dallas in 1977. The PET 2001 was the technological marvel of its day with a whole 4K of RAM on the motherboard! What was truly revolutionary about the PET 2001 was its price – only \$595. (U.S.) That gave birth to a motto which is still basic Commodore philosophy: ***Better Technology at Lower Prices.***



Commodore PET 2001

Successful Growth Strategies

In the years following the introduction of PET 2001, the development of computer and data-processing technology surged forward with dramatic speed. Commodore



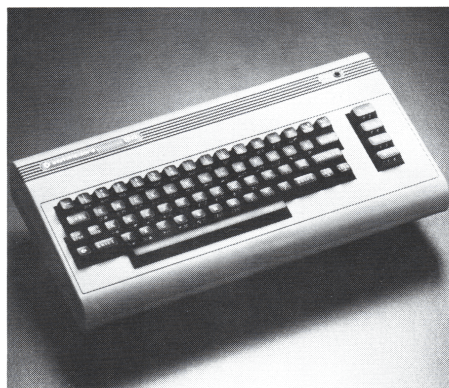
Commodore VIC 20

made a key, strategic move: It segregated its consumer microcomputers

and professional systems into separate divisions. The PET 2001 became the basis of the 8000 series of computers for technical and commercial use; and Commodore filled the gap in the consumer market with the VIC 20 (VC 20 in Germany). The VIC was an instant hit because of its ability to display color pictures and graphics. By 1982, more than one million units had been sold worldwide. The first ever computer to sell that quantity in one year.

C64: The World's Most Successful Computer

The 1980s was the decade of furious development in the computer sector. In 1982, Commodore created another sensation with the introduction of the Commodore 64, or C64. The C64 made computer technology affordable for any household. It was



Commodore 64

a hit in universities, and even used by major companies. Because of its excellent color and graphics capabilities – not to mention its affordability – the C64 is still in use today despite the advent of more powerful desktop computers.

More than 400,000 C64s were sold in fiscal 1990-1991. No doubt about it – this was the machine that popularized the small computer. More than 11 million units have been

sold worldwide, making the C64 the best-selling desktop machine in the history of the industry.

The Founding of Commodore in Germany

As Commodore developed a worldwide reputation, it became a major force in developing the European computer market. Ten years after the establishment of Commodore International, the company established a German division (Commodore Buromaschinen GmbH) in 1971, with offices in Hanover. Later, the company would relocate to Frankfurt.

Over the next few years, Commodore also established subsidiaries in France, Great Britain, the Netherlands, Sweden, Italy, Switzerland, Austria, Belgium, Denmark, Norway, Portugal and Spain. It didn't take long for the German operation to emerge as a locomotive for Commodore's European sales thrust. Almost from the start, the results in Germany have been consistently strong, with steady growth.

But Commodore is doing more than selling computers in Europe. It is also manufacturing in Europe. In 1980, a production and development facility was established at Braunschweig, Germany, a first for Commodore in Europe. This was in line with the company's preference for its own production rather than subcontract the work or license out its brand names. Since the Braunschweig plant opened, it has handled European production of the Commodore PC and Amiga lines.

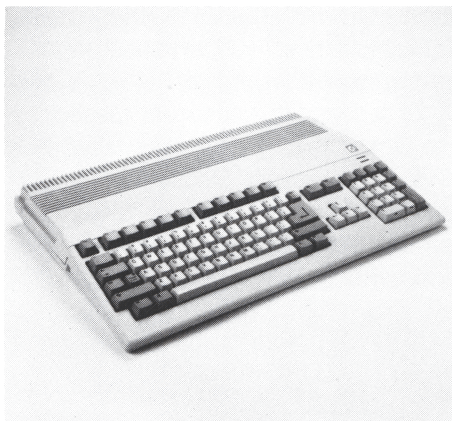


Company News

Market Leader in Microcomputers and the Amiga Phenomena

After a successful launch into the MS-DOS market in 1985, Commodore has kept bringing out a steady stream of new products. The key words here are *PC* and *Amiga*. The earlier decision to target the professional market has been paying off handsomely, enabling Commodore to emerge as an undisputed leader in German microcomputer sales. It ranks second in the European market for professional application and fifth among U.S. manufacturers, according to the market research institute Dataquest.

Spurring sales is Commodore's innovative multimedia technology, which integrates the computer functions, plus digital sound and high-grade animation and video in a single unit. That is making Commodore the market leader in multimedia technology. *BYTE*, a leading U.S. computer magazine, describes the Amiga 3000 as "an impressive machine." For three years running, the Amiga 500 has been selected "Computer of the Year" by the German computer magazine *CHIP*. In 1991, an international panel named the Amiga 500 the "European Computer of the Year" for the second year in a row. This European award – the Grammy or Oscar of the European computer industry – only made its debut in 1990.

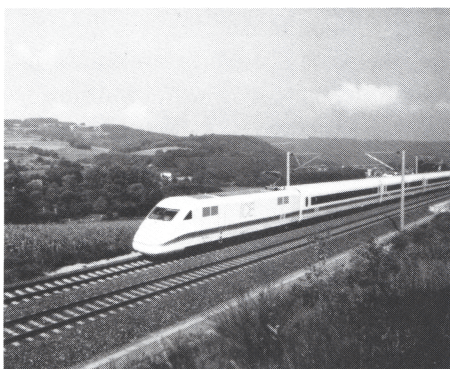


Amiga 500

Changing Trends in the 1990s

Besides the mass-market 500, the Amiga family consists of the 2000 and 3000, which are designed for the professional market. Sales efforts in Germany have been re-organized into four divisions: PCs, Networking, Amiga and Consumer Products. Each of these divisions has claimed a major market niche. Big business customers like Thyssen, Batelle-Institute and the German Federal Railways as well as universities and many mid-sized companies report great satisfaction with their Commodore systems because they are able to tap the considerable know-how and experience of each division.

In 1991, the German company unveiled "Profi-line" – a line of products spanning the four divisions. There is a model in Profi-Line for every user. The SL 286 is ideal for



German Federal Railways

beginners, the high-powered tower (T486 -25C) provides the power and multi-tasking capability that professionals and smaller business require. At the high end are Amiga 3000, Amiga 3000T and Amiga 3000 UNIX, new product lines which are bringing more and more professional users and larger business over to Commodore. With its complete networking product, including Amiga 3000 UX workstations and Intel-based servers, Commodore is setting a new standard for systems for business and industry.

Now CDTV – Commodore's Newest Multimedia Innovation

Another example of the Commodore strategy to keep developing new markets with new-concept technology is the company's world-leading initiative with CDTV. CD-ROM technology allows storage of huge amounts of data on compact discs that look just like the kind of CDs used for playing music.

CDTV, or Commodore Dynamic Total Vision, is the marriage of CD-ROM with Amiga technology, which means that graphics stored on a CD can be brought to the screen with stunning clarity and brilliance.



Commodore CDTV

This is multimedia carried to new heights. Following on its long success story with PET 2001, VIC 20, C64, Amiga and Profi-Line, Commodore is poised to define the multimedia product of the 1990's. For many months now, leading computer journals have been talking about CDTV. For many users, it has already set a new standard for a multimedia application.

There's no doubt about it. At age 20 and 30 respectively, Commodore Germany and Commodore International are poised for success, ready to meet the challenges facing the computer industry right into the 21st century.



Commodore is No. 2 in Europe

A total of 7.5 million personal computers were sold in the European market in 1990. This is the figure released by the British market research organization, Dataquest, in its study of August 1991. According to the study, the Frankfurt computer manufacturer, Commodore, with a market share of 12 percent, was No. 2 in the European market, just after the market leader IBM with a 15 percent market share.

In the second quarter of 1991 alone, a total of 1,775 million computers were sold in Europe according to Dataquest. With 11.6 percent market share, Commodore continues to hold its position as No. 2 in the European computer market. As Commodore's German Managing Director, Helmut Jost, said when opening Commodore's latest office in Warsaw, Poland, these figures emphasize the company's ability "to expand dynamically and successfully in spite of a worldwide stagnating computer market".

A comparison between the Commodore sales figures of the second quarter 1991 and those of market leader IBM clearly indicates that, with IBM computer sales totalling 14.8 per cent market share, the company was only just able to maintain the edge over Commodore. Another competitor, Compaq, a company that as recently as 1989 ranked second in the European market with a 9.5 per cent market share, fell back to fourth position with a 6.4 per cent market share in the second quarter of 1991. Other major suppliers, such as Apple and Olivetti, have clearly lost their grip on the European market.

The position of the Frankfurt computer manufacturer stands out even more if one was to base the turnover figures and market share on the German Desktop - PC market. According to the latest information released by the market research organization, International Data Corporation (IDC), the PC industry's sales turnover in Germany in 1989 amounted to around two million computers. Thus, contrary to previous, more pessimistic forecasts, PC sales experienced another

boom during 1990. German reunification, in particular, had a favorable effect on PC sales. As a result, 1990 PC sales to market research organizations rose by close to 30 percent compared with the previous year's sales. With a market coverage of 27.7 percent, the IDC study clearly shows Commodore to be market leader - in terms of volume of completed deliveries - in the German PC market. Says Jost: "As far as turnover is concerned, the company chiefly owes its No. 1 ranking amongst the top ten suppliers to the increasing market acceptance of the professional product line sold under the trademark of "Profi-Line", as well as to the company's reorganization into separate PC, Networking, Amiga and Consumer Divisions."

According to the company, the rapid growth in sales was also largely due to the Amiga product line. The company clearly managed to hold on tight to its strong position in the market despite the selection process forecasted by leading research institutions, which had already been well underway by 1990 and which will continue to escalate throughout this year.

However, Commodore is also gaining an increasingly bigger market share in another market segment. Commodore has become firmly established in the fiercely competitive and highly promising European Notebook market with its portable computer line.

The Notebook C386 SC-LT launched on the market in the spring could even develop into a market hit amongst the range of mobile secretaries: It was the first and may be the only portable computer on the desktop computer market that comes with a modem and provides access to a BTX and data transmission facility. Says Jost: "On account of the increase in sales in all our product sectors, we are very optimistic about the company's future in spite of the increasingly widespread trend in this industry to oust the weak from the market."

Commodore Has Some Impressive Partners in Germany

To get to be market leader in Germany Commodore has naturally acquired some impressive partners who use our products. Some of these customers are noted here:

DAG:

In the years 1988-1991, over 300 Commodore computers were installed by the DAG nationwide. These units are operated in the areas of word processing, bookkeeping and also File-Server in the network. The DAG operates exclusively Commodore computers on federal, land, and regional levels.

German Railways (Deutsche Bundesbahn):

The German Railway has also worked with Commodore systems since 1987. Important to the decision of the German Railway were the efficiency and compatibility of the Commodore Profi-Line products. All systems from the 286 to the 486 PC are, with the use of special cards, equipped with low-radiation monitors (according to the Swedish standard) with increased picture repeat frequency. The Commodore products correspond to the German Railway-standard under consideration of economic aspects. Already over 4,000 professional Commodore systems are in operation at the German railway. They are similarly used as Stand-Alone standard systems, as in the area of office communications and connectivity to the diverse German Railway mainframe, locally as well as remote (for example, over the German Railway's own X-25 network). Commodore has thereby the largest share by far in installed PCs with this customer. Among other important customers for Commodore, Germany are the BATELLE INSTITUTE with over 200 systems, BEWAG AG, DILLINGER HUTTE with 150 Commodore PCs, MAHO AG with some 200 systems, NOELL AG, RHEINBRAUN AG and VOGEL VERLAG.

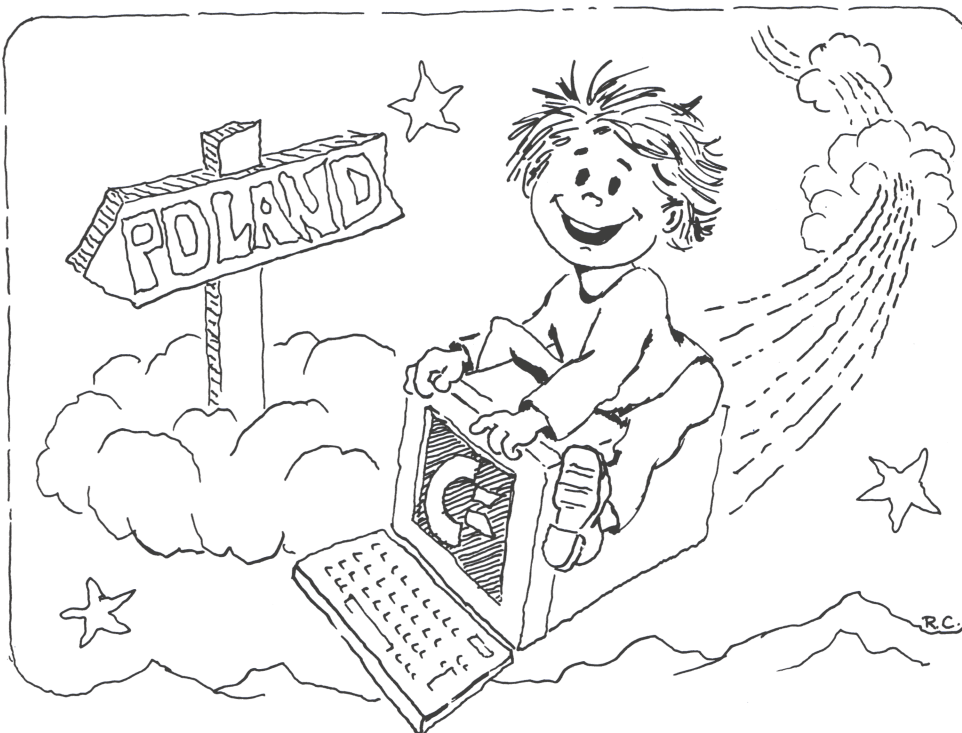


European News

Commodore Opens Office in Poland

Computers made by the German Technology Group of Commodore are to facilitate the economic recovery in Poland and Eastern European countries. Having opened its doors to the West and having initiated reforms designed to restructure the economy, Poland has given a clear signal to the Western industrialized nations. It is this development that the Frankfurt computer manufacturer, Commodore, has now responded to: By opening up the first representative office in Eastern Europe, the company has indicated its confidence in the Polish and Eastern European economy.

Says Helmut Jost, Managing Director of Commodore Germany and Vice President of Commodore International on the company's commitment in Poland: "By having a representative office in Warsaw, at a time when Poland and Eastern Europe are experiencing a difficult rehabilitation phase, our company is making available the entire range of technical expertise and know-how of an internationally operating conglomerate that has taken us 30 years to acquire." The leading principle is to create a solid and future-oriented basis for conducting business by building up a genuine partnership between East and West as far as EDP is concerned. For this reason, the concept of cooperation between the Polish economy and Commodore comes first. Says Jost: "Modern computer technology is also a prerequisite for economic growth. Commodore is putting all its bets on partnership and fairness, not least through its policy of affordable



technology."

In any case, the starting conditions for a fruitful cooperation are favorable, indeed: Demand for modernization and the willingness of Polish companies to invest in new and modern computer technology is greater than ever before. Even more so now that this market is faced with complete restructuring following the disappearance from the market of East German computer manufacturer, Robotron, whose products were once leading in the Polish and Eastern European PC markets. A challenge which Commodore is ready to accept with all its technical expertise and know-how. Large firms, medium-sized and small businesses, but also schools, banks and insurance companies as well as municipal services are increasingly resorting to Commodore solutions. By opening up its representative office in Warsaw, the Frankfurt technology group is able to satisfy the growing demand.

For this reason, Commodore will now be represented on the Polish market with its entire range of products in order to be able to meet the market requirements. Thus, the beginner's models C64 and Amiga 500 for the school and training sector will be just as readily available as professional PC and network solutions for the industrial sector. This means that the product lines of the four corporate divisions, PC Division, Networking Division, Amiga Division and Consumer Division, that are available in Western Europe will also be sold on the Polish and Eastern European market. Says Jost: "With our effective and low-cost range of information technology products we want to be actively involved in supporting the rehabilitation process of the Polish economy."

Commodore Warsaw operation will be headed by Andrzej Draczowsky who will handle distribution, marketing and sales.



World of Commodore 1991 Continuing the Tradition

In December 1983, celebrating 25 successful years in business, Commodore hosted the first ever *World of Commodore* in Toronto, Ontario. The three year old VIC-20 had already sold over 1.5 million units to become the industry's first "platinum" seller. Its successor, the C64 launched in August 1982, was shipping over 40,000 machines per month, well on its way to becoming the number one selling computer of all time with sales to date of over 15 million!

As the first North American international computer show orchestrated by a single computer company, World of Commodore was an ambitious undertaking. With the help of show managers Hunter Nicholas Inc., it was a resounding success attracting over 25,000 attendees. It was also the smallest World of Commodore ever.

At the second show, held in 1984, new products and new ideas were everywhere. One of the most innovative was the MusicMate from Sequential Corp. of San Jose, CA. They introduced a musical keyboard that connected directly to the Commodore 64, a forerunner of today's elaborate musical peripherals.

1985 was a watershed for new products from Commodore. First and foremost was the launch of the Amiga 1000 – perhaps the most exciting new computer of the year. Also introduced at WoC-III was the Commodore 128, a higher performance home computer that was compatible with the C64's 6000 software programs. In addition, Commodore took its first steps in the MS-DOS arena with the launch of PC10 and the PC20.

In 1986 Commodore displayed its vision of the future of computing. Both the C64 and C128 were to include GEOS, an early version of the graphical user interfaces that now dominate computing. Another prod-

uct almost overlooked in 1986, but a vital component in Amiga computing today, was the Amiga Genlock 1300 that enabled Amiga computers to integrate with external video sources. On the MS-DOS side Commodore joined the 8026 fray with the PC40 equipped with a full 1 MB of RAM.

1987 saw attendance jump over 40,000 for the first time as WoC grew in popularity. Enthusiasts flocked to see the two new Amigas – the powerful affordable 500 and the expandable 2000 which offered DOS compatibility for the first time. Real-time 3-D animation became a reality on the Amiga with the introduction of VideoScape 3-D from Aegis.

Celebrating Commodore's 30th birthday, the sixth annual World of Commodore in 1988 was a showcase for the diversity of Commodore's product line. The C64 continued its amazing run by actually improving on 1987 sales! The Amiga joined the VIC-20, the C64 and the C128 in the ranks of Commodore's million sellers club. And the Commodore PC60, based on Intel's 386 chip, helped make Commodore Canada's second largest manufacturer in the MS-DOS marketplace.

In 1989 the Amiga truly came of age. While the C64 kept selling and Commodore's PC computers gained acceptance in business and government markets, World of Commodore '89 was a coming-out party for the Amiga. Developers showered the market with software that took advantage of the Amiga's unique capabilities in color processing, animation, sound and video. For Amiga fans, this was your show!

Last year Commodore took another step into the future of computers. Hailed as the C64 of the nineties, CDTV merged CD-ROM technology with the Amiga operating system to make interactive TV a real-

ity. Competing for attention were NewTek's incredible Video Toaster, an add-on card that turned an Amiga into a video production studio, and Commodore's own Amiga 3000, a sleek, powerful new Amiga.

The 9th Annual World of Commodore carried on the tradition. Taking place on December 6, 7 & 8th last year, the show was again produced by The Hunter Group in conjunction with Commodore and was held at Toronto's International Center. Many of the exhibitors from previous years returned with new and improved products and several new companies may turn into long term successes.

Highlights of the Show

With around 30,000 people attending the show, one of the major highlights was that attendees were invited to make their own rock videos using an Amiga with Toaster and a Pioneer Laser disc.

Also featured was an Amiga Art contest using Deluxe Paint IV. Contestants were given 45 minutes to draw a picture which was then printed using a Sharp color printer. At the end of three days approximately 200 entries had been submitted. The renowned artist, Charles Patchter, was commissioned to do the judging and choose a winner.

Overall with around 70 exhibitors showing off the wide world of Commodore computers and the very extensive back-up of peripherals and software, the show was once again a great success. To Commodore it was a wonderful showcase and to the attendees an unique opportunity to evaluate all there is available to enhance their Commodore computing in 1992. Congratulations to all involved in making the show a success and part of Commodore life in Canada.



Canadian News

Commodore Teams With Kawai to Co-Market Computer Music Systems

Commodore Business Machines Canada Ltd. and Kawai Canada Music Ltd. have announced a co-marketing arrangement designed to facilitate the sales and purchasing of computerized music systems.

The deal calls for joint marketing support and bundling of Commodore's Amiga computers and Kawai's electronic keyboards, music software and MIDI devices. "This type of arrangement goes beyond simply promoting a concept. Together we are delivering a straight forward, easy to implement solution to a rapidly growing marketplace," commented Tom Shepherd, Commodore's Director of Marketing.

Consumers currently deal with four sources to get a computer, a keyboard, music software and a MIDI interface. By bundling the four components, Commodore and Kawai are ensuring compatibility and providing consumers with a functional home recording studio at an attractive entry price.

"Our expertise in the music industry, particularly electronic instruments, and Commodore's experience in multimedia computer application creates a definite synergy," commented Rob McCardle, Kawai's Division Manager, Consumer Products. "The fact that we are both experienced in selling to the home market is a benefit as well."

Co-marketing arrangements at the manufacturer level are a growing trend in the retail business. The bundling of products from different vendors to offer a complete solution has traditionally been done by dealers. When done at the manufacturing level, packaging and product design become part of the mix.

"Our approach to the home market is to create packages that are usable in the home," added Shepherd. "By creating and delivering applications that appeal to the creative side we are going beyond the traditional belief that people will actually balance their cheque book or file their recipes on a home computer."

Initially, two bundles are being made available to both Commodore dealers and Kawai dealers. The "FunLab" music system combining a Kawai FS680 keyboard, FunLab Music Software (including a MIDI interface) and an Amiga 500 com-

puter with a monitor. The "FunLab Junior" package combining a Kawai MS710 keyboard, FunLab Jr. Music Software (including a MIDI interface) and an Amiga 500 computer with a monitor.

Established in 1927, Kawai is a world leader in the manufacture and sale of pianos, electronic organs and electronic musical instruments. The company, with over 5,800 employees worldwide, also produces sporting goods, toys, furniture, housing products, and fabricated metal.

Canadian Broadcasting Centre to Feature Amiga Computers in Touchscreen Building Directory

The Canadian Broadcasting Corporation (CBC, Canada's state-owned radio and TV network, has contracted with St. Clair Videotex Design Limited, Toronto, to create, configure and install a building directory for the new Canadian Broadcasting Centre, using a network of 40 Amiga 3000 computers from Commodore.

The new office tower, scheduled to open in June, will be equipped with an Amiga-based interactive touchscreen building directory that locates any individual, department or project team, and provides animated directions.

The Amigas will be mounted in attractive wheelchair-accessible kiosks throughout the facility. First-time users need only to touch a screen in response to video or audio clues (in English or French) to begin a self-guided tour of the directory. Experienced users may bypass interim steps with "wildcard" entries that immediately call up specified information.

Donna Bevelander, senior project planner, said CBC desired a sophisticated electronic building because of plans for the building's size, the network's large and constantly changing workforce, a steady flow of guests and vendors, and the CBC commitment to a bilingual workplace.

"The Canadian Broadcasting Centre will encompass 1.7 million square feet on 14 floors, each of which covers 3 1/2 acres," Bevelander said. "We are consolidating offices, production and broadcasting facilities that are now in 28 loca-

tions around Toronto. The building will house approximately 3,200 employees."

A Multilingual Facility

"Had a traditional building directory been erected, employees and visitors would get off one of the 23 elevators and face a 10-foot by 20-foot wall of tiny text in two languages and little arrows that didn't tell you anything," Bevelander said.

"With the St. Clair building directory in place, employees and visitors will get off the elevator and find a friendly touchscreen that asks you if you prefer your information in English or in French."

St. Clair Videotex is a designer, developer and producer of custom interactive multimedia solutions for corporate and public sector clients.

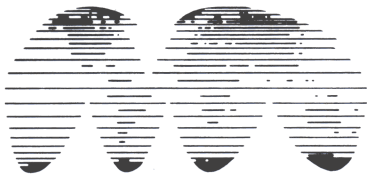
H. Douglas Peter, president of St. Clair, said they chose the Amiga computer for the CBC application because it offers flexibility, multitasking and unmatched multimedia capabilities.

"We will need to integrate and frequently update information for the center's system from various databases – the PCs they use to process telephone directory information, the way they use to process architectural information – and the Amiga 3000 is flexible enough to do that," Peter said.

"We also have to maintain a 99.9 percent service level, meaning the system has to be accessible to users virtually all the time," Peter said. "With the Amiga's multitasking capabilities, we can achieve that by running the program that updates information, monitor system performance and analyze user preference in the background, without interrupting users."

"St. Clair also was sold on the Amiga's multimedia capability. Its built-in multimedia tools allow us to mix text, graphics, animation and audio to create an unusually good level of communication between the user and the information," Peter said.

In addition to the 40 Amiga 3000s located in kiosks, hardware for the CBC installation will include an Amiga 3000 Master Station and an Ethernet LAN. Software for the installation is comprised of AmigaVision authoring language, St. Clair's Control Panel, ProSound audio editor, CDTV and Deluxe Paint for graphics, an AutoCad and dBase/ Super-Base interfaces.



Amiga News

Commodore Delivers on Multimedia Computing Promise

When Commodore introduced the Amiga in 1985 and established practical multimedia computing, many thought of the technology as destined only for specialized markets. Unlike some of history's "visionary" technologies that never managed to find a market of reasonable application, multimedia is delivering on the promise that it heralded five years ago.

The U.S.A. market for computers used in multimedia-type applications is expected to grow to about \$11.4 billion by 1995, according to *Desktop Presentation*. Multimedia technology has grown steadily through an increasing number of applications, and has a large and loyal audience.

As a result, many major computer manufacturers have plans to provide a multimedia class machine before 1995. Sales of interactive videodisc courseware (a key multimedia application for all markets) have already exceeded \$500 million and are projected by SK & A Research to grow to \$2.5 billion annually by 1992.

The "promise" of multimedia originally was a new capability utilizing multiple forms of media to design and develop programs that helped sell a product in a store, sell management on a new project, and educate students in exciting, interactive ways. Multimedia now has come to mean that and much more.

What Is Multimedia?

Commodore defines multimedia as: "A method of designing and integrating computer technologies on a single platform that enables the end user to input, create, manipulate and output text, graphics and audio and video, utilizing a single user interface."

Multimedia integrates basic information processing with animation, sound, color graphics and video. There is a misperception that multimedia is a single application when it is really a technology or group of technologies.

The Amiga was designed as the first microcomputer with multimedia capabilities and is poised to maintain its technol-

ogy leadership in the 1990s with its line of delivery and development products including CDTV Multimedia Player, the Amiga 3000 CPU and the AmigaVision authoring system.

What Can Be Done With Multimedia?

Early multimedia users included graphic artists, professional video and music users, and producers who took advantage of the Amiga's superior graphics capabilities and multitasking ability.

Educators also developed interactive video presentations -- video and computer programs running in tandem under the control of the user, providing full motion video and sound.

Interactive video applications are popular and effective in the following segments:

- **Education**, where \$4-5 billion in federal U.S.A. funding is available for basic skills, adult education and correctional training, according to *Educational Turnkey Systems*.
- **Corporate, industrial and government training**, with computer and related hardware expenditures of about \$1.8 billion annually, according to *Training Magazine*.
- **Retail point-of-sale**, with expected sales of about \$200 million, according to *Exhibit Builders Magazine*.

The initial growth of multimedia was slow in-part because the technology lacked an easy-to-learn, simple-to-use authoring system. Although versions of authoring systems are available for a number of computers, they generally require the knowledge of complex programming languages -- well beyond the reach or patience of the average user.

Thanks to AmigaVision, multimedia is no longer for the computer elite. AmigaVision is an iconic, flow-chart-based authoring system that takes the confusion out of authoring multimedia presentations or courseware. The Amiga's competitive pricing makes it accessible; and together with the affordable AmigaVision, the Amiga provides an attractive

price performance in a multimedia machine.

Where is Multimedia Now and Where is It Going?

Multimedia applications used to be expensive, physically unwieldy and universally complex. Through the evolution of a number of technologies such as video projectors, videodiscs, CD-ROM and authoring software, multimedia is becoming more than just the latest industry buzzword; it represents the most significant new application area for personal computers.

With the Amiga, Commodore is a leader in a number of markets, including 3-D animation and modelling, paintbox and character generation. For example, in the professional video market, the Amiga's share has grown to nearly 70 percent of the animation segment, according to Sheer & Chaskels on Research. *Keyboard Magazine* says the Amiga has a 15 percent share of the professional music market.

The machine's integrated technology, storage capacity, graphics chips, versatility, on-board 4-voice, 2 channel audio and multitasking make it an ideal personal workstation for demanding professional applications in key markets.

Computer-Based Training

Computer-Based Training (CBT) is of great interest to education, business and government markets. With CBT, the learner determines and affects a program's flow and content by responding to instructions at predetermined points.

So much of CBT is self-directed, it is important to be able to develop programs that are highly interactive. Though self-directed CBT won't substitute instructors, thousands of school teachers and instructors who struggle with overcrowded classrooms will use it to provide more tailor-made learning programs for students. Students will be able to spend more time improving particular needs and enhancing specific talents.



Amiga News

Professional Video

Fastest growing in the video segment is the computer-based graphics industry. Computers primarily used in this segment are character generation, paint and 3-D modelling animation systems.

Presentations and Displays

The Amiga's ability to perform real-time animation makes it the computer of choice. For example, in Hollywood it was used to develop titles for "Three Men and a Baby"; and in Miami, the national Football League's largest electronic scoreboard is controlled and animated by the Amiga.

Professional Music

The professional music market comprises \$53 million in computer equipment, according to *Keyboard Magazine*. This segment includes music teachers and students, musicians who use electronic or synthesized music, composers and song writers.

These users have turned to the Amiga because of its built-in four-voice, two-channel audio and the machine's line of professional software and MIDI interfaces with the ability to handle real-time sequencing and digital editing.

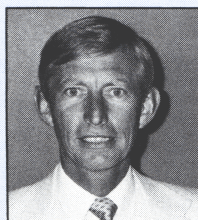
EDITORIAL

Usually this editorial is about Commodore but this time it is about the dramatic effect that computers can have on the lives of less fortunate people. Next to this editorial is a piece written on a computer by Michael Wells who was written off by much of society as being not only "physically handicapped" but also "mentally retarded". When you read this piece you may find this latter statement hard to believe. Because of his "physical challenge" every letter had to be tapped out with a rod attached to his head.

I got to know Michael through my wife who has been helping him. Michael is a Bahamian who since birth had no physical control over his arms and legs and can "hardly manage the very simplest grunt of "yes" and "no" for speech. Everyone assumed he was also mentally handicapped as he had no means of communicating. This was not true. Michael taught himself to spell by watching *Sesame Street*. But until the computer came along all he could do was attempt to communicate by tapping at letters on a big board while someone watched. A microcomputer has dramatically changed this and his life, as you will realize from this article. The article is done by a man who

for the first 20 years of his life had an impenetrable wall through which he could not communicate with the world. But for his own incredible determination, hidden intelligence, happy nature and a computer this might still be so.

For 16 years I have been involved with microcomputers since launching the Commodore PET in the U.K. For all the amazing things that have developed from the start none can probably match in simple human terms the ability of wordprocessing to open a window on the world. Michael is a remarkable human being who because of his almost complete physical handicap could well be considered mentally retarded. Michael would also have never written the article I include here. Indeed Michael could probably have never communicated with me when I have met him other than with his infectious and remarkable smile. Technical progress and human progress make a happy marriage. Please read Michael's article.



Christopher "Kit" Spencer
Editor
Commodore Worldwide News
Commodore Electronics Ltd.
Sassoon House
PO Box N10256
Nassau
Bahamas

Being Physically Challenged Does Not Mean Mentally Retarded

When people see a person in a wheel chair, they assume that person is mentally retarded. Some people don't know the difference between mentally retarded and physically challenged. Just because a person is in a wheel chair does not mean that



the person is mentally retarded. A physically challenged person can think for him or herself, they have ambitions, just like any normal person. They can be just as intelligent, they can make important decisions, they can even be creative. He or she might not be able to talk, to express their thoughts, but that does not mean they don't understand what is going on around them. Their brain works just like any normal person, although the rest of their body may not. People need to stop judging the book by its cover: they should read the book before they pass judgement. I'm a physically challenged person. When people see me they assume that I'm mentally retarded, but I'm not mentally retarded. I'm just physically challenged. That goes to show that even doctors don't know everything. People just don't understand that a person could be physically challenged without being mentally retarded. People should treat a physical challenged person as normally as possible, and not think of a physically challenged person as being mentally retarded.

Michael Wells



What Videography Magazine Had to Say About the Amiga

Perhaps an indication of just how important the Commodore Amiga has become to the video industry was illustrated last year when the North American magazine *Videography* devoted a 30 page special report exclusively to our computer. We very much appreciate their support and recognition of the value of the Amiga within their community.

Naturally we are unable to reproduce here the full text of their report but we would like to include a selection of quotes.

Jim St Lawrence: "Of the eleven different computers I've acquired in the last 14 years, the Amiga is the most fun. The Amiga is a phenomom and a very important one. It can be seen as a kind of low-priced tool in a very high priced industry. In a way, it represents the future, when video tools are a dime a dozen, and anyone can make a video. Talent and distribution, however, are another question."

Todd Rundgren: "What's exciting about the Toaster to me is that it brings it within the realm of possibility for someone like a college art student to make this their thesis. They simply get themselves an Amiga and a Toaster, learn how to use it, and realize their vision in this new art form. They don't have to have a lot of money and they don't have to call in a whole lot of outside help."

Peter Lulleman: "There are a number of high-end professional units that work with the Amiga today and produce spectacular results at a fraction of the usual price. Today the graphics and video for the Amiga have reached a point where they can be considered serious tools by the video professional. Developers, driven by a very cost-conscious market, have produced products for the Amiga that retail for only a fraction of the cost of similar products on other platforms."

Ray M. Unrath: "With only one exception, all makes and models of 'low-cost' personal computers output videographics in a sequential scan raster format - not 2:1 interlace, and certainly not the TV specs of 525 or 625 lines. So how can they work in television? In all cases, add-on hardware/software provides in essence, a 'standards converter.' The one exception is the *Commodore Amiga*."

Christopher Koler: "The Amiga is widely acknowledged as an excellent microcomputer for video use. In fact, independent research (Sheen & Chaskelson, *PVM IV* 1990) reports the Amiga as the overall leading system across a number of application categories within the professional video industries today.

This is as compared to both dedicated video devices, as well as microcomputers. There are specific reasons for this broad adoption of the Amiga as a preferred video system.

The Amiga is the only microcomputer that was designed and built to be especially video oriented. This means that, as a system, it has integrated both video and computer technology.

The Amiga has been a leader in the microcomputer revolution of delivering practical, quality 3D imaging for unprecedented affordability and ease-of-use."

Peter Lulleman: "Don't look now, but the Amiga is increasingly being used as a character generator (CG) in video production work ranging from special-event market, to PBS stations, to corporate video, to cable TV.

There is a valid reason for this. Not only is the Amiga modestly priced but over the years very powerful CG programs have been created specifically for this computer. Again, what set the Amiga apart from all other personal computers is its powerful graphics capability."

Jim Carey: "The support of the Amiga community is one of the major assets in working with this platform. There is an undeniable feeling that we have the best computer system for video production."

Walter Williams: "A lot of the projects that I work on don't have large budgets, so the Amiga allows me to produce very cost-effectively. Also it gives me a lot of control over my designs and how the finished product will look. I'm able to do things, like animated bumpers, that would not be able to be done on a modest budget with traditional video equipment. I like working with the Amiga because I'm able to do everything myself, and many techniques I've learned on the Amiga are applicable to most of the higher-end systems."

Michael Grotticelli: "Anyone who still doesn't understand that the Commodore Amiga is a professional video production tool needs only to look at who's using it to be convinced. From high-end corporate production to the special-event videography market, the Amiga computer can be configured as an effective system for everything from paint and 3-D animation to effects and editing."

Keith Nealy: "The Amiga is screaming ahead again. I have seen some things that are happening in the 24 bit area relating to paint and animation that literally blew me away. For me, the beauty of the Amiga is that it was designed from the ground up to be compatible with video. Also in the arena of price performance, there's nothing that can touch the Amiga."

John Vernon: "As far as durability to stand up to the rigors of everyday production we haven't experienced any problems. The Amiga is as reliable in the control room as any of the 'dedicated' video components we use."



Commodore International Announces CDTV Consortium Japan

Commodore International has announced a joint effort to form "CDTV Consortium Japan" (the Consortium) with Mitsui & Co. for the purpose of promoting and developing CDTV players and titles in Japan.

Commodore and Mitsui began inviting other Japanese companies to join the Consortium prior to the opening of the Tokyo International Multimedia Expo '91. Commodore, Mitsui & Company and Dai-Nippon Printing Company, one of Japan's largest printing companies, are the managing companies to disseminate information on CDTV to members. The Consortium will develop (1) new software titles using multimedia techniques including motion pictures, and (2) new products on the CDTV platform. Japan Electronics Publishing, PCM Complete and others have already commenced planning for the development of software titles in Japanese. ASCII and a number of other Japanese companies have expressed an interest in joining the CDTV Consortium Japan. Japanese companies interested in the multimedia industry are expected to join the Consortium, and a full list of members will be announced in the near future.

The CDTV player, which is already on sale in the U.S.A. and Europe, is the first consumer interactive multimedia player to combine the worlds of the computer and CD-ROM. For businesses and consumers, CDTV simultaneously plays audio and displays video, graphics and text data in a unique way. The first CD-ROM multimedia player for TV home use, CDTV connects to a TV just like a VCR and is compatible with virtually any television or monitor.

CDTV has been well received since its launch a few months ago and is developing an avid following. The large memory capacity and interactive functionality of CD-ROM technology enables CDTV to provide various types of information, presentations, educational materials, technical manuals and product catalogs for business use, as well as titles for music, information, education, entertainment and games for consumers. CDTV has wide applicability in vertical markets like point-of-sale displays, corporate training devices and information kiosks.

Currently, the CDTV Consortium Japan members are developing titles for

these vertical and other markets. In Europe and in the U.S.A., over 100 titles have been released.

New Accessories Expand Capabilities of Commodore CDTV Interactive Multimedia Player

Commodore introduced a full line of accessory products that expand the capabilities and facilitate use of its CDTV Interactive Multimedia player at the Consumer Electronics Show in Las Vegas. The new peripherals include a full-size Qwerty keyboard, 2-button mouse, floppy disk drive, trackball controller, video Genlock and 64K and 256K personal memory cards.

Commodore is also offering a computer enhancement pack, the CDTV-P, which bundles the keyboard, mouse, floppy disk drive and AmigaDOS operating system (the "Appetizer" software pack) together to enable the CDTV player to be expanded to an Amiga personal computer.

"The CDTV player is a revolutionary product and is designed specifically to accommodate peripheral products," said a Commodore CDTV spokesman. "One of CDTV's strengths is that it can be easily and affordably expanded into an Amiga personal computer. Commodore is introducing three accessories that transform the CDTV player into a computer: a keyboard, a floppy-disk drive and a mouse."

The CDTV keyboard is a fully-functional, wired, detachable 94-keyboard. It includes 10 function keys as well as a separate numeric keypad and separate cursor keys for maximum capability. The CDTV floppy-disk drive is an external drive for 3.5" disks and there is an infrared opto-mechanical mouse with 2-button design functionality. A plug-in 2-button mouse is also available.

"Expanding the CDTV player into an Amiga computer allows consumers to access the library of more than 2,500 Amiga titles already in the market," continued the CDTV spokesman. "From word processing to home finance to games, there are CDTV titles for everyone in the family."

In addition, Commodore offers a trackball controller which increases speed and control for fast-paced interac-

tive multimedia titles such as action/adventure games and sports simulations. The trackball controller operates through an infrared remote control or a plug-in cable.

There is also a video Genlock card which synchronizes visuals from CDTV applications with video from a camcorder, videotape or live television broadcast and enables the combined signal to be recorded onto a VCR. The Genlock is switchable between Video-Only, Combined (CDTV plus Video) or CDTV-Only and is controlled by the standard remote control.

Commodore is also introducing two Personal Memory Cards for use with the CDTV player. The CDTV Personal Memory Cards or CDTV-PMC look like credit cards and plug directly into a special slot in the front of the CDTV player. They come in two sizes – PMC-64k and PMC-256k – and provide an easy, convenient way to save information for future use. Selected CDTV titles can utilize a PMC to save a position or scores in adventure games, store an incomplete picture from painting programs, or provide a "bookmark" or save text of reference titles.

In addition to new CDTV computer-expansion accessories, Commodore also offers the "appetizer" software package which incorporates four separate programs on a single floppy disk. Each program, "Write," "Paint," "Music," and "Tiles" are simple and easy to use, and take advantage of the power, speed and versatility of the Amiga format.

The disk contains "Write," a word processor; "Paint," a mouse-driven graphic paint program that provides a large palette of colors, paint tools and sophisticated functions such as flipping, scaling, rotation and 16 levels of zoom magnification; "Music" a full notation editor and music player that uses samples sounds and standard music notation to create and playback songs and compositions; and "Tiles," a video game that challenges the user to unscramble a jumbled picture before time runs out. "The 'appetizer' is just that – a sample of the programs that have been developed for the Amiga system, that now are available to owners of the CDTV player with these accessories," said the CDTV spokesman.



Exciting New Titles for CDTV Applications Library

Commodore previewed more than 20 new titles for the CDTV Interactive Multimedia applications library at the Las Vegas Consumer Electronics Show in January. Commodore has now introduced approximately 80 titles for CDTV and plans to double that number in the next few months. The new titles include an action adventure from Lucasfilm Games, *Indiana Jones and the Last Crusade*; a jump and run arcade game, *Prehistorik*; *North Polar Expedition*, an educational learning title; and *Time Table of the Arts and Entertainment*, the latest addition to the Xiphias *Time Table of History* series of reference discs.

"From exciting interactive games to innovative reference discs, these new applications expand the CDTV library to offer families the best variety of multimedia entertainment and learning," said a Commodore CDTV spokesman.

Indiana Jones and The Last Crusade from Lucasfilm Games brings the adventure of the smash hit movie right into your living room. Travel with Indiana Jones, in the quest for the Holy Grail. Enhanced high resolution graphics, animation and Compact Disc-quality music from the rousing John Williams score, combine to make this the ultimate version of the award-winning graphic adventure game. This Lucasfilm title will be available in the first quarter of 1992 from CDTV Publishing at a suggested manufacturer's price of \$49.95.

Jump and run arcade games, so popular with young game enthusiasts, reach a new level of fun and humor with *Prehistorik* from Titus. There is a laugh a minute as you play the role of a cave man in search of food. The sound effects add enjoyment to the well-executed graphic animations of this new CDTV title. *Prehistorik* will be available in the first quarter of 1992 at a suggested manufacturer's price of \$49.95.

The multimedia division of Virgin Games gives you the opportunity to lead an expedition to the top of the world from the comfort of your living room or classroom with its latest title for the CDTV player, *North Polar Expedition*. Designed for individual or group play, this simulation, based on an actual expedition, teaches geography, social studies, planning and interpersonal skills. Its

graphics and sound effects are so realistic that you'll turn up the thermostat. *North Polar Expedition* will be available in the first quarter of 1992 at a suggested manufacturer's price of \$59.99.

Imagine the fun of learning a new language when you have one of Europe's most popular comic strips to help you. In an interactive comic book format, *Asterix* and his friends teach you to speak and to read while having fun. *Asterix et Fils* for learning French is the first in a series to be released for the English-speaking market. In addition to seeing the cartoons, hearing the words spoken and seeing the text, the titles incorporate a translation to English and teacher notes to explain idioms and other special features of the language. One of the most valuable features is the ability to record your own voice pronouncing foreign phrases. You can then compare your accent to the voice on the disc by playing them both back. This feature uses the Voice Master audio digitizer and microphone form Microdeal. *Asterix et Fils*, books one and two, are available now from Eurotalk for a suggested retail price of \$49.95 each.

From the first cave paintings to today's computerized animation, the *Time Table of the Arts and Entertainment* from Xiphias, explores the most significant events in our global culture. With more than 4,200 original stories enhanced with multimedia effects that include zoom-in maps, bibliographic and museum references, pictures or animations, and music sound segments, *The Time Table of the Arts and Entertainment* lets you discover the artists, writers, and performers from all ages at the touch of a button.

"Like our two previous CDTV titles, *The Time Table of Science as Innovation* and *Time Table of Business, Media and Politics*, the *Arts and Entertainment* disc offers families a new and lively way to study history," said Peter Black, Xiphias president. *Time Table of the Arts and Entertainment* is scheduled for release in February 1992 at a suggested price of \$50.95.

Other CDTV titles recently introduced include *Guinness CDTV Disc of Records*, which brings the best-selling book of fascinating feats and achievements to life with audio-visual tours, animation, sound and pictures; *Falcon*, a flight simu-

lator featuring video clips and voice-over based on actual dogfights; and the *American Vista Atlas*, the multimedia tour of the United States which boasts more than 1,000 photographic images, hundreds of high-definition maps, fascinating cross-referenced facts and an audio collection of regional folk music and spoken text.

In addition to expanding the CDTV library, Commodore U.S.A. has also bundled two of the most impressive CDTV titles with the player. For a limited time, consumers who purchase the player also receive *The New Grolier Electronic Encyclopedia* and *Lemmings*. The single *Grolier Encyclopedia* disc, which contains all 21 volumes of the *Grolier American Academic Encyclopedia*, has more than nine million words, thousands of color photos and graphics, and audio ranging from calls of exotic birds to the music of great composers. *Lemmings* is the award-winning, fast-paced adventure game in which players have to lead as many cute, hyperactive lemmings as possible through each level of play. This bundling offer represents a value of almost \$450, based upon suggested retail prices.

The CDTV library boasts reference titles such as *Dr. Wellman: Family Health Advisor*, *The American Heritage Illustrated Encyclopedia Dictionary*, the *Complete Works of William Shakespeare*, *New Basics Electronic Cookbook* and the *World Vista Atlas*. Arts and leisure titles include the *GardenFax* series and the *Family Circus Video Titler*. Music lovers will find several music applications of interest, including three Karaoke titles which utilize the add-on video Genlock feature of CDTV; *Composer Quest* from D.T.s; and *Musicolor* from Virgin Multimedia, which teaches music notation and composition and is based on the world-renowned teaching method of Candida Tobin.

Educational titles range from children's multi-lingual interactive readers *Cinderella* and *The Tale of Peter Rabbit*; *My Paint*, an electronic coloring book; and self-discovery titles like *Fun School* and *A Bun For Barney*. There are also perception skills applications like *Mind Run I and II* and language instruction titles like the *Asterix* series and *LTV English*.



CDTV News

In addition to CDTV applications, the CDTV player also plays conventional audio Compact Discs and the new music industry standard CD+Graphics (CD+G). CD+G, of which there are many titles currently available, brings a new dimension to in-home music entertainment – graphics provide on-TV annotation and illustrations which play along with the music. CD+G on-screen images takes a variety of forms – photographs, translations, librettos, atmospheric illustrations, notation, commentary, lyrics and more. Warner New Media has released a collection of CD+G titles, including classical music discs from Beethoven, Mahler, Mendelssohn, Liszt, Bach and Mozart.

The CDTV player represents a major advance in technology and capability over any commercially available format, combining audio, video, graphics and computer interactivity into a single, Compact Disc-based system. The storage capacity of the compact disc is enormous – the equivalent of more than 250,000 pages of typewritten text. This capacity enables developers to create applications which combine unparalleled levels of interactivity with vivid graphics and sound.

Most CDTV titles have suggested retail prices ranging from \$39.95 to \$79.95. In the U.S., the CDTV player is supported by Commodore's industry-leading *CommodoreExpress* program. This program features a toll-free customer "hot line" – 1-800-662-6442 – where Commodore-trained support professionals are on duty 24 hours a day, even weekends and holidays, to answer questions. The program also features a one-year limited warranty and free pick-up and delivery in the U.S. by Federal Express for warranty product repair.

Commodore, through its worldwide operations, is one of the world's leading producers of computer-based consumer and business products.



Commodore "Twin Market" Strategy Establishes CDTV in Business, Consumer Markets

In the U.S.A., Commodore is implementing both business and consumer market strategies for its CDTV Interactive Multimedia player. The revolutionary technology of the CDTV player, which integrates audio, video and graphics into a single, powerful format, offers businesses, as well as consumers, a wide variety of interactive capabilities with tremendous storage capacity.

According to a CDTV spokesman, Commodore's pursuit of both the business and consumer markets is part of a program to establish CDTV as the pre-eminent format in the multimedia category.

"The massive storage capacity of the CD-ROM format coupled with the CDTV player's unique combination of superlative graphics, sound and ease-of-use has created a powerful business tool with great potential," said the spokesman. "The same CDTV player that is currently being sold to consumers will be used by major companies for point-of-sale displays, travel and hotel information services, and numerous other applications. "The CDTV player is a flexible product offering functionality which can be easily and affordably expanded with the addition of a hard-disk drive, modem and printer," the spokesman added. "The CDTV player's high-quality image display capabilities, interactivity and cost-effectiveness make it superior to virtually any other business video display format."

Commodore is working with a growing number of third-party value-added resellers (VARs) developing programs that utilize CDTV technology into their client's sales and marketing, consumer services and training efforts. Among VARs using CDTV technology are: *GuestServe Systems* (Movado, CA.) for in-room hotel services; *DCI Marketing* (Milwaukee, WI.) for information kiosks; *Digital Vision* (Washington, D.C.) for Scala interactive information systems; *New Visions* (Los Angeles, CA.) for mall kiosks; and *Imstall Corporation* (Falls Church, VA.) for skills training. *DCI Marketing* demonstrated two prototype kiosks at the Commodore booth during Winter CES 1992.

The potential for CDTV in business applications is enormous, according to a CDTV spokesman. "For consumer com-

panies that need to demonstrate a product or display image-based information, the CDTV player provides a level of vividness, functionality and cost-effectiveness that no other format can match. The player can interface with input devices such as a keyboard, keypad and touch-screen monitor to provide users with considerable versatility. And don't forget the Amiga authoring environment – it's easy, affordable and there are plenty of tools," he added.

The focus on business applications is designed to supplement the ongoing consumer marketing effort. Commodore is the first company to sell a consumer interactive multimedia player on an international scale. Currently, the CDTV player is available in more than 20 markets in North America, Europe and Asia, with additional countries being added in 1992. There are currently approximately 80 applications available for the CDTV player, including educational/reference titles, sports, video games, children's education and leisure activities.

"It has been our approach from the beginning to develop the product and the markets carefully," said the CDTV spokesman. "More than just a new product, the CDTV player is the first component in an emerging product category. As a result, we are being careful and selective in opening up distribution to ensure that we can support the product properly to build strong awareness and move units."

Currently the CDTV player is available through 700 outlets in selected department stores, consumer electronics, software and computer stores in major U.S. cities such as Los Angeles, San Francisco, Chicago, Dallas, Houston and Phoenix. Retailers include Video Concepts, McDuff's, Fry's Electronics, Broadway Southwest, Macy's California, Waldensoftware, Whole Earth Access, Software Etc., among others. In addition, CDTV players are available in selected Amiga dealers in major markets nationwide.

In 1992, Commodore will continue to roll-out the product throughout the United States, Europe and Asia.



Market News

Leading U.S.A. Computer Stores

In a recent survey published by Dataquest *Computerland* was shown to be the largest retail seller of computers in the U.S.A. with estimated sales at \$2,600 million from 750 stores. The second largest was shown to be JWP/Businessland with sales of \$1,800 million. In third place on sales was Intelligent Electronics with \$1,500 million. According to the survey the top 9 retail groups accounted for sales of around \$10,000 million . . the industry has come a long way since the first computer store opened in Silicon Valley around 15 years ago.

Leaders in Computer Sales

Sales of leading computer retail chains, in millions of dollars

Number of stores

Computerland	\$2,600	750
JWP/Businessland	1,800	50
Intelligent Electronics	1,500	1,100
Inacom	950	680
Tandy	900	3,000
Microage	750	650
Compucon	700	68
Egghead *	500	400
Sears Business Centers	400	110

Source: Dataquest

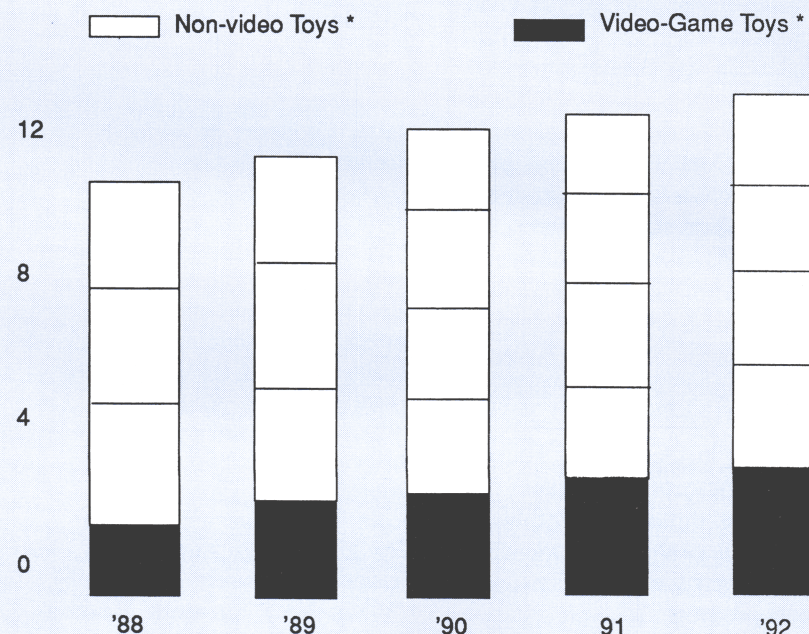
* Software Only

Video Games and Toys in the U.S.A.

In a survey published in Business Week from data compiled from the Toy Manufacturers of America it was estimated that the U.S.A. toy market in 1991 was worth around \$12,500 million out of which the video game segment represented a massive \$3,100 million. The vast majority of this latter category went to Nintendo.

It is interesting to note that this is almost exactly the same size as the retail market shown for computers.

U.S. Toy Sales



▲ BILLIONS OF DOLLARS

EST.

* Wholesale

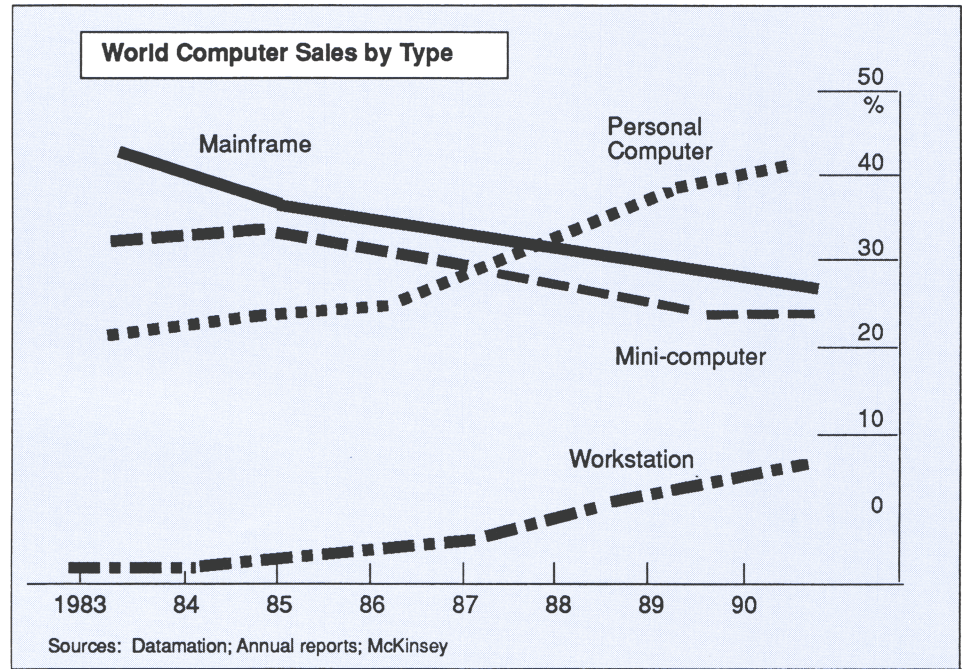
Data: Toy Manufacturers of America, Kidder Peabody & Co.



Market News

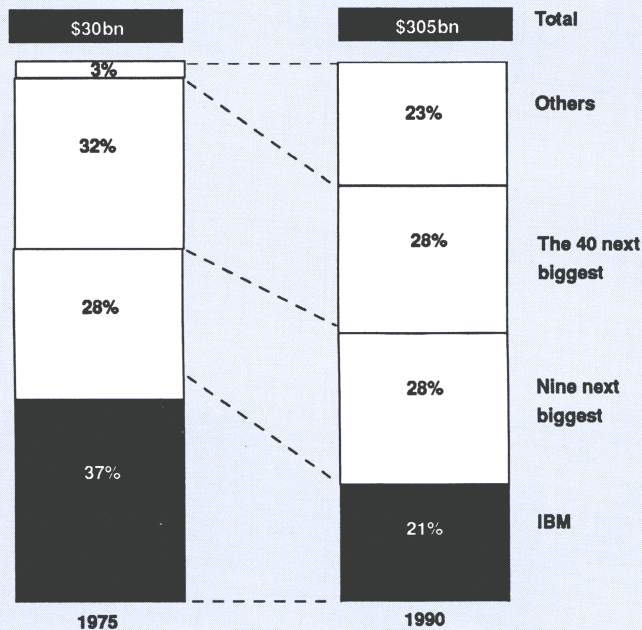
The Changing Computer Markets of the World

In the following graphs we chart the way the world computer market has changed in recent years. In the first chart we see how the personal (microcomputer) market has grown over the last 8 years to the single biggest category with about 40% of the market. The mainframe market has declined at an almost exactly similar percentage of the total market to where it now accounts for about 25% of the market. As can also be seen the mini-computer share of the market started to take off in the late '80s. The workstation is now approaching 10% of the market and the mini-computer is down to around double this at just over 20%.



The changing nature of the market is also shown in the accompanying chart where it can be seen that while IBM remains the single biggest company, its share has dropped from 37% to 21% with all this loss of share and more being taken up by companies that did not feature in the biggest in 1975. Two companies, Apple and Compaq, that are entirely micro based have since 1985 gone into the 15 largest in the world.

Data-processing revenues, by size of company



* made one or more acquisitions in 1985-90

** does not include ICL

Ranked by computer revenue

1985	1990
1 IBM	1 IBM
2 DEC	2 DEC
3 Sperry Univac	3 Fujitsu**
4 Burroughs	4 NEC
5 Fujitsu	5 Hewlett-Packard*
6 NCR	6 Hitachi
7 NEC	7 Unisys*
8 Control Data	8 Siemens-Nixdorf*
9 Hewlett-Packard	9 Olivetti*
10 Siemens	10 Groupe Bull*
11 Hitachi	11 Apple
12 Olivetti	12 NCR
13 Wang	13 Toshiba
14 Honeywell	14 Compaq
15 Groupe Bull	15 EDS
23 Nixdorf	



Financial News

Commodore Announces Second Fiscal Quarter Results

Commodore International Limited (NYSE: CBU) reported earnings of \$40.1 million, or \$1.18 per share on sales of \$371.6 million for the second fiscal quarter ended December 31, 1991. This compares with earnings of \$36.5 million, or \$1.12 per share on sales of \$384.1 million in the year-ago quarter. Earnings per share of \$1.18 in the December quarter were based on diluted average outstanding shares of 34 million versus 32.4 million in the prior year.

For the six months ended December 31, 1991, net income increase to \$45.4 million, or \$1.35 per share compared with \$43.5 million, or \$1.34 per share in the prior year. Sales for the six months were \$575.7 million compared with \$584.4 million in the year-ago period.

Net sales declined 3% for the quarter, due entirely to the adverse impact of foreign currency fluctuations. Unit sales of the Amiga line increased 21% while C64 sales experienced nominal growth. Sales of the Professional PC line and CDTV combined to offset volume declines related to the discontinued low-end MS-DOS range.

Gross profit for the quarter declined 11%, due entirely to the adverse impact of foreign exchange rates. Operating expenses were reduced by 18% versus the prior year, more than offsetting the decline in gross profit. These factors resulted in net income for the quarter of \$40.1 million.

On December 30, 1991, the Company repaid a 100 million Deutsche Mark debenture issue, and maintained a year-end cash position at a level approximately equal to the prior year.

Mr. Irving Gould, Chairman and Chief Executive Officer, stated: "We are pleased with the sustained growth in the Amiga and Professional PC lines, along with the continued demand for the C64. The growth in profitability for the quarter was achieved despite the significant unfavorable effect of foreign exchange rates."

Commodore International Limited, through its operating subsidiaries around the world, manufactures and markets personal computers to customers in the professional, government, education and consumer market sectors. The Company has four product lines: the Amiga multimedia computers, the MS-DOS PC compatibles, the C64 computers and the CDTV.

Commodore International Limited and Subsidiaries Condensed Consolidated Statement of Operations

(Unaudited) (\$000's)

	Three Months Ended December 31,		Six Months Ended December 31,	
	1991	1990	1991	1990
Net Sales	\$371,600	\$384,100	\$575,700	\$584,400
Cost of Sales	251,000	248,600	398,000	385,700
Gross Profit	120,600	135,500	177,700	198,700
Operating Expenses	73,100	89,100	119,500	139,800
Operating Income	47,500	46,400	58,200	58,900
Interest Expense, Net	4,500	4,400	8,400	8,900
Other Expense	800	3,200	1,800	4,000
Income Before Income Taxes	42,200	38,800	48,000	46,000
Provision for Income Taxes	2,100	2,300	2,600	2,500
Net Income	\$ 40,100	\$ 36,500	\$ 45,400	\$ 43,500
Earnings Per Share:	\$1.18	\$1.12	\$1.35	\$1.34
Average Shares Outstanding	34,034,000	32,582,000	33,605,000	32,477,000

Commodore International Limited and Subsidiaries Condensed Consolidated Balance Sheets

(Unaudited) (000's)

	December 31, 1991	December 31, 1990
Cash and Investments	\$119,800	\$123,300
Accounts Receivable, Net	303,600	291,700
Inventories	217,800	224,500
Other Current Assets	10,200	12,800
Total Current Assets	651,400	652,300
Fixed and Other Assets	109,000	95,900
	\$760,400	\$748,200
Current Debt	\$60,200	\$31,000
Other Current Liabilities	266,600	244,700
Total Current Liabilities	326,800	275,700
Long-Term Debt and Other	86,700	165,000
Shareholders' Equity	346,900	307,500
	\$760,400	\$748,200

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